

Hartford, VT
Energy Commission
(HEC)

STEP-BY-STEP GUIDE

Improving Efficiency in Municipal Street and Public Space Lighting



http://www.encyvermont.com/docs/for_my_business/lighting_programs/EVT_MunicipalStreetLightingGuide_Rev040111.pdf

Streetlight ~~Replacement~~ Revision

- Each light has a purpose
- No duplication
- Amount of light sufficient for but not excessive for purpose
- Color rendering as true as possible consistent with efficiency
- Night sky protection

Streetlight Functions

TURN OFF	LEAVE ON
redundant	at corners/intersections
at the end of dead end streets	lighting pedestrian zones (downtown areas; sidewalks; other)
causing dysfunctional glare	near businesses that routinely have client or worker traffic after dark
at rural road hazards (e.g. curves), once appropriate reflective signage is in place	

The Team (in no particular order)

- sturdy nocturnal volunteers
- public works official(s)
- regional planning commission
- town residents
- lighting engineer
- town officials
- Efficiency Vermont
- other experienced towns

Street lights: Chapter 1

(assess and turn off)

\$120,000 / yr for power to 562 streetlights

inventory

develop objective criteria for streetlight placement

map those to be removed

public neighborhood fora re: plans

turn off / remove 217; add 7

352 streetlights (= 63% of baseline)

63% of \$120,000 = \$75,160 (\$44,840/yr saved)

LED vendor/product qualities to assess

- Heat distribution mechanism (and current per LED)
- Warranty periods (driver; light source; enclosure)
- Vendor's assistance with photometrics
- On-site adjustability of light distribution
- Vendor's commitment to photometric verification of specs
- Ease of luminaire replacement
- Previous installations and feedback

LED options to consider

- Optics (light distribution pattern)
- Controls (motion sensor; photometric control; timer control)
- Current (mA; ?field-adjustable)
- Color rendering

Street lights: Chapter 2

(LED swapout)

352 streetlights



307 serviced by GMP

45 either decorative / historic district, or serviced by CVPS

Swapout costs:

+ fixture purchase \$328 - \$586 ea.
+ residual amortization payoff \$100 ea.
+ replacement labor \$200 ea.
-Efficiency VT rebate \$300 ea.

Totals (approx)

+\$122,800
+\$ 30,700
+\$ 61,400
-\$ 92,100
\$122,800

TOTAL (approx)

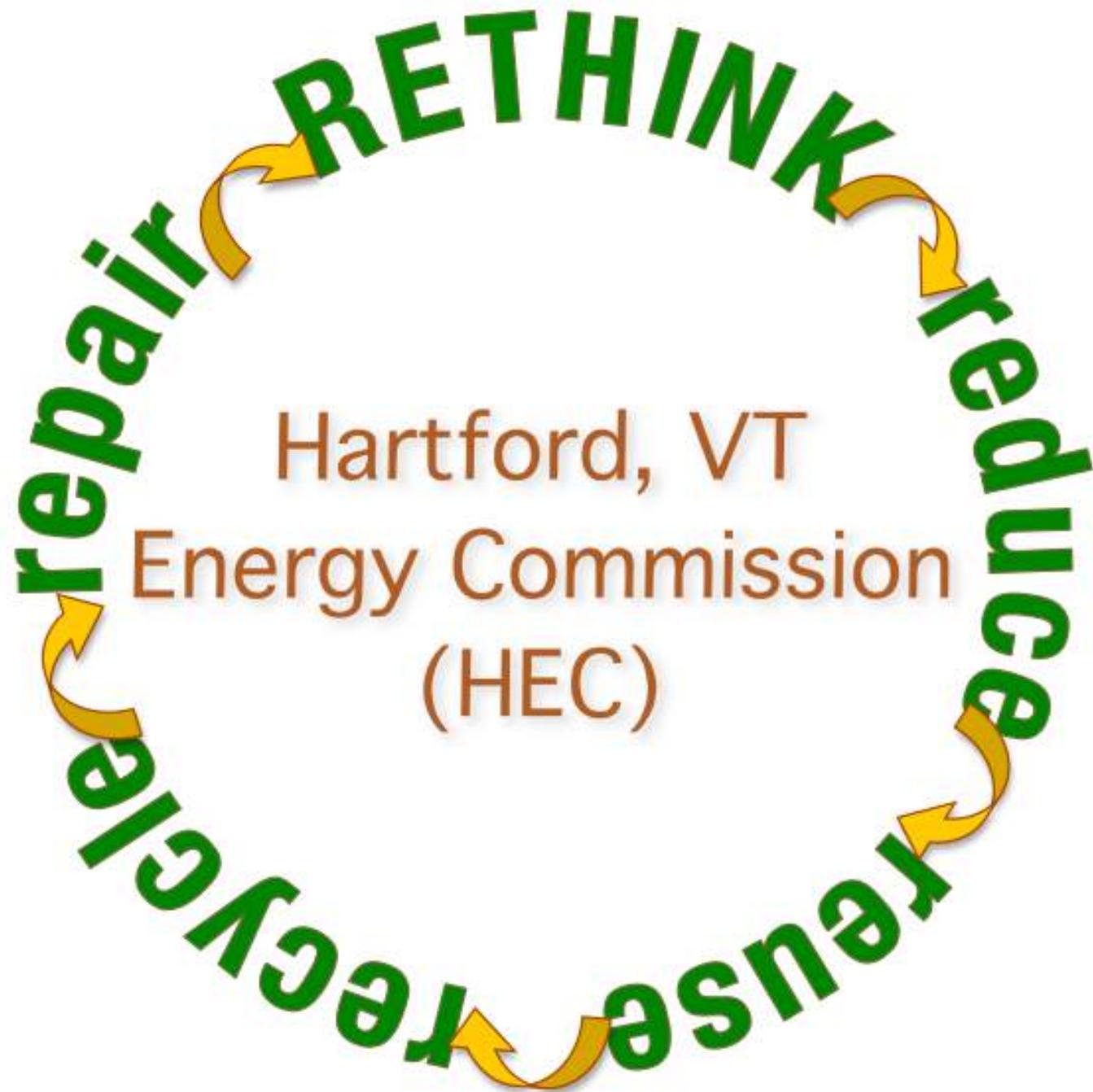
(+ replacement luminaires, capitalization)

Streetlight operating cost comparison

	Existing	LED
Total charges per annum, 307 lights under discussion	\$56,144	(Rate 18) \$ 9,188
Pole use fee (\$16/ea/yr)	\$0	\$ 4,912
Total annual costs	\$56,144	\$14,100

Per-year savings: \$42,044

Simple payback: ~3 years



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